

JUN 5 4 54 PM '92

Before the  
Federal Communications Commission  
Washington, D.C. 20554

RECEIVED BY

PR Docket No. 92-125 ✓

In the Matter of

Amendment of the Aviation Services  
Rules (Part 87) to authorize use of  
the frequency 406.025 MHz for Emergency  
Locator Transmitters (ELTs).

RM-7611

## NOTICE OF PROPOSED RULE MAKING

Adopted: May 22, 1992;

Released: June 5, 1992

Comment Date: July 27, 1992

Reply Comment Date: August 11, 1992

By the Commission:

## I. INTRODUCTION

1. The National Oceanic and Atmospheric Administration of the United States Department of Commerce (NOAA) filed a petition (RM-7611), public notice given February 7, 1991, Public Notice No. 1836, requesting that the Commission amend Part 87 of the Rules, 47 C.F.R. Part 87, to authorize the use of the frequency 406.025 MHz for emergency locator transmitters (ELTs) on aircraft.<sup>1</sup> The Federal Aviation Administration (FAA) and the United States Coast Guard (Coast Guard) filed comments supporting the use of 406.025 MHz for ELTs.

<sup>1</sup> Emergency position indicating radiobeacon stations are used to send a distress signal that is used as an alerting signal and to assist search and rescue personnel. In the United States such beacons are named emergency locator transmitters (ELTs) when carried on an aircraft and emergency position indicating radiobeacons (EPIRBs) when carried on ships. ELTs and EPIRBs operate on the same frequencies and transmit identical distress signals.

<sup>2</sup> These frequencies are allocated internationally for use by emergency beacons such as EPIRBs and ELTs. See Radio Regulations, No. 3259, (International Telecommunications Union, 1990). The aviation industry typically refers to these ELTs as 121.5 ELTs.

<sup>3</sup> COSPAS is an acronym for a Russian phrase meaning space system for search and distress vessels. SARSAT stands for search and rescue satellite-aided tracking.

<sup>4</sup> The current satellite system does not have any storage capability for the 121.5 and 243.0 MHz distress signal and, thus, can only act as a "bent-pipe" to relay the distress signal to a ground station for processing. Because there are "blind spots" in the

## II. BACKGROUND

2. ELTs are small battery powered transmitters carried on aircraft that are used to transmit a distress signal. Presently, ELTs authorized in the United States operate on the frequencies 121.500 MHz and 243.000 MHz (hereafter 121.5 ELT).<sup>2</sup> The distress signal is used to alert others of a distress situation and to assist search and rescue (SAR) operations. When activated, 121.5 ELTs can be detected by overflying aircraft or nearby land stations if they are monitoring the distress frequency, or by low orbiting satellites that are part of an international satellite system, COSPAS/SARSAT.<sup>3</sup> A problem with the 121.5 ELTs, however, is that for satellite detection their location can only be computed if a satellite can relay, in real time, the distress signal to a ground station.<sup>4</sup>

3. In the 1983 Mobile World Administrative Radio Conference for the Mobile Services (MOB-83), the frequency 406.025 MHz was allocated for the exclusive use of low-power, earth-to-space emergency position indicating radiobeacons. On August 24, 1988, the Commission adopted rules authorizing the use of this frequency for EPIRBs in the Maritime Radio Service.<sup>5</sup> As an integral part of that rule amendment we adopted technical standards for such EPIRBs.<sup>6</sup>

## III. DISCUSSION

4. NOAA's petition asks the Commission to authorize the use of the frequency 406.025 MHz for ELTs. In support of its petition NOAA states that the COSPAS/SARSAT system, primarily using the frequencies 121.5 MHz and 243.0 MHz, has progressed to a fully operational international system. NOAA notes the system has 18 nations participating and is responsible for having saved 1,607 people as of October 30, 1990. It indicates that potentially greater benefits would be derived from the implementation of the 406.025 MHz ELT.

5. The FAA strongly supports authorizing the use of 406.025 MHz for ELTs.<sup>7</sup> The FAA states that it is the agency responsible for requiring the carriage of ELTs and that it intends to allow 406 MHz ELTs to be voluntarily carried in addition to 121.5 ELTs.<sup>8</sup> In support of 406 MHz ELTs the FAA has developed technical standards<sup>9</sup> that will provide a means for manufacturers to get FAA and FCC equipment approval.

current satellite system (i.e., not every location on earth can be seen continuously from a satellite), emergency beacon signals may not get relayed to SAR personnel. As discussed below, the satellite system used for 406 MHz beacons can store distress signals and relay them to a ground station.

<sup>5</sup> See Report and Order, PR Docket No. 86-424, 3 FCC Rcd 5406 (1988).

<sup>6</sup> The technical standards are incorporated by reference in Section 80.1061 of the Commission's Rules, 47 C.F.R. § 80.1061, and are contained in the Radio Technical Commission for Maritime Services (RTCM) document titled "RTCM Recommended Standards for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRBs)", dated July 31, 1987.

<sup>7</sup> FAA comments at 1.

<sup>8</sup> See 55 Fed. Reg. 12316 (April 2, 1990).

<sup>9</sup> These technical standards reference the Radio Technical Commission for Aeronautics (RTCA) document "Minimum Operational Performance Standards 406 MHz Emergency Locator Transmitters (ELTs), Document No. RTCA/DO-204", approved by RTCA on September 29, 1989.

6. The Coast Guard also supports authorizing the use of 406.025 MHz for ELTs.<sup>10</sup> The Coast Guard states it has considerable interest in this rule making because of its involvement in a substantial number of SAR operations involving aircraft needing assistance in maritime areas and its experience with 406 MHz EPIRBs. According to the Coast Guard, between 1985 and 1989, it participated in 1071 SAR operations in which aircraft needed assistance, resulting in 656 lives saved.<sup>11</sup> Further, the Coast Guard believes, based on its experience with the 406 MHz EPIRBs, that the carriage of 406 MHz ELTs will result in fewer ELT false alarms.<sup>12</sup> The Coast Guard notes that the transmitted distress signal contains an identification code that can be used to identify the owner of the beacon and the type of vessel in distress to facilitate SAR operations. The Coast Guard states that this information is maintained in a NOAA database which allows SAR forces to contact the licensee and determine whether the transmission is real or false, resulting in more efficient SAR operations and more lives saved.

7. NOAA is responsible for operating the Mission Control Center that receives emergency signals from the COSPAS/SARSAT satellite system. When NOAA detects a distress alert, it computes the position and forwards the information to the appropriate SAR forces who judge what SAR resources are needed. NOAA states that the 406 MHz distress alerting system offers several potential advantages over the current 121.5 MHz ELTs. Because the 406 MHz signal is digital, it is able to be stored and retransmitted once the satellite is over a ground station. This gives the system world-wide coverage with no blind spots. Additionally, the current 121.5 MHz ELTs are experiencing problems with false alarms. These ELTs may transmit false alarms due to aircraft hard landings, mishandling, or problems related to beacon design, installation, or maintenance. NOAA also believes the 406 MHz system will virtually eliminate the problem of false alarms by providing SAR forces with an emergency contact number accessible through its database. This would permit SAR personnel to contact the aircraft owner in the event of an inadvertent activation of an ELT and avoid dispatching valuable SAR resources.<sup>13</sup>

8. An amendment of the rules providing for the use of the frequency 406.025 MHz could improve aircraft safety by providing for enhanced distress alerting functions. Our experience to date with EPIRBs that operate on this frequency has been favorable.<sup>14</sup> Further, the use of 406.025 MHz will become more widespread once the Global Maritime Distress and Safety System<sup>15</sup> (GMDSS) is implemented. Finally, use of 406.025 MHz for ELTs is supported by both the FAA and the Coast Guard. Accordingly, we propose to amend Part 87 of the Rules, as reflected in the Appendix hereto, to authorize the use of 406.025 MHz for ELTs. No application for modification of existing license would be required. Further, we propose that ELTs be required to comply with the technical standards in the Radio Technical Commission for Aeronautics (RTCA) document "Minimum Operational Performance

Standards 406 MHz Emergency Locator Transmitters (ELTs). Document No. RTCA/DO-204". In addition to these proposals, we seek specific comments to the following issues:

- Currently the 406 MHz EPIRBs are required to have a low power 121.500 MHz transmitter for "homing". Should 406 MHz ELTs be required to have an integral 121.500 MHz "homing" beacon?
- Are there international requirements not covered in RTCA's technical standards?
- Should ELTs capable of operating on 406.025 MHz be certified as meeting COSPAS/SARSAT standards by an independent laboratory as is required for the 406.025 MHz EPIRBs or is the Commission's type acceptance process sufficient?

9. Currently, NOAA administers and maintains a database that contains a unique identification code for each 406 MHz EPIRB. Registration in this database is presently voluntary. Manufacturers must program into each EPIRB this unique code and provide an equipment plate or label on each 406 MHz EPIRB displaying the unique NOAA identification code and registration instructions.<sup>16</sup> Manufacturers must also include a pre-addressed post card soliciting the owner's name and address, telephone number, the type of ship and the unique identification code for registration with NOAA's database. In regard to this issue of registration with NOAA, we propose to treat 406 ELTs in the same manner that we treat 406 EPIRBs. We propose to require manufacturers to program each 406 MHz ELT with a unique code and to provide on each 406 MHz ELT a plate or label containing the registration instructions requested by NOAA. Additionally, we propose to require manufacturers to include with each marketed 406 MHz ELT a pre-addressed post card soliciting the name, address, telephone number, identification code and aircraft type of the owner for registration in NOAA's database. We seek specific comment as to the expected effectiveness of voluntary registration. For example, should the registration be made mandatory and if so what enforcement might be contemplated if beacons are not registered?

#### IV. PROCEDURAL MATTERS

10. This is a non-restricted notice and comment rule making proceeding. *Ex Parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in Commission rules. See generally 47 C.F.R. §§ 1.1202, 1.1203, 1.1206(a).

11. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before **July 27, 1992**, and reply comments on or before **August 11, 1992**. To file formally in this proceeding

<sup>10</sup> U.S. Coast Guard comments at 1.

<sup>11</sup> U.S. Coast Guard comments at 1.

<sup>12</sup> U.S. Coast Guard comments at 2.

<sup>13</sup> NOAA Petition at 2.

<sup>14</sup> The frequency 406.025 MHz has been authorized for shipboard use since October 3, 1988. See 53 Fed. Reg. 31004 (August 17, 1988).

<sup>15</sup> The GMDSS will replace the existing international manual Morse code ship-to-ship radiotelegraph system with a fully automated ship-to-shore distress alerting system using advanced satellite and terrestrial data communications systems.

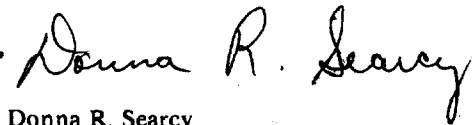
<sup>16</sup> NOAA assigns a block of serial numbers to a manufacturer to be assigned to EPIRBs as they are manufactured.

ing, you must file an original and five copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments and reply comments, you must file an original plus nine copies. You should send comments and reply comments to the Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the Docket's Reference Room of the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554.

12. We certify that the Regulatory Flexibility Act of 1980 does not apply to this rule making proceeding because if the proposed rule amendments are promulgated, there will not be a significant economic impact on a substantial number of small business entities, as defined by Section 601(3) of the Regulatory Flexibility Act. The change proposed herein will have a beneficial effect on the aviation community by permitting the use of 406.025 MHz for ELTs by aircraft. These changes are voluntary and will not cause significant economic impact on any entity. The Secretary shall send a copy of this Notice of Proposed Rule Making, including the certification, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 605(b) of the Regulatory Flexibility Act, Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. §§ 601-612 (1980).

13. For further information, call James Shaffer, Private Radio Bureau, Special Services Division, (202) 632-7197.

FEDERAL COMMUNICATIONS COMMISSION



Donna R. Searcy  
Secretary

## APPENDIX

Part 87 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

**Part 87 - AVIATION SERVICES**

1. The authority citation for Part 87 continues to read as follows:

**AUTHORITY:** 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, unless otherwise noted. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-156, 301-609.

2. In Section 87.133(a) the stability table is amended by adding a new entry at the end of paragraph (6) to read as follows:

**§ 87.133 Frequency stability.**

(a) \* \* \*

Frequency band (lower limit exclusive, upper limit inclusive), and categories of stations.	Tolerance <sup>1</sup>	Tolerance <sup>2</sup>
* * * * *		
(6) Band-137 to 470 MHz:		
* * *		
Emergency locator transmitters on 406 MHz . .	N/A	5
* * * * *		

3. In Section 87.137(a) the emission table is amended by adding a new entry in alphabetical order to read as follows:

**§ 87.137 Types of emission.**

(a) \* \* \*

Class of emission	Emission designator	Authorized bandwidth (kilohertz)		
		Below 50 MHz	Above 50 MHz	Frequency deviation
* * * * *				
G1D . . . . .	16K0G1D		20 kHz	
* * * * *				

4. In Section 87.147 paragraph (b) is amended by revising the first sentence and adding a new paragraph (e) to read as follows:

**§ 87.147 Type acceptance of equipment.**

\* \* \* \*

(b) ELTs that operate on the frequencies 121.500 MHz and 243.000 MHz that are manufactured after October 1, 1988, must meet the power output characteristics contained in paragraph 87.141(i) of this section when tested in accordance with the Signal Enhancement Test contained in Subpart N, Part 2 of this Chapter. \* \* \*

\* \* \* \*

(e) Application for type acceptance for ELTs capable of operating on the frequency 406.025 MHz must include sufficient documentation to show that the ELT meets the requirements of § 87.199(a).

5. In Section 87.173 the frequency table in paragraph (b) is amended by adding a new entry in numeric order to read as follows:

**§ 87.173 Frequencies.**

\* \* \* \*

(b) \* \* \*

Frequency or frequency band	Subpart	Class of station	Remarks
-----------------------------	---------	------------------	---------

\* \* \* \*

406.025 MHz . . . . .	F, G, H, I, J, K, M, O	MA, FAU, FAE, FAT, FAS, FAC, FAM, FAP	Emergency and distress
-----------------------	---------------------------	---	------------------------

\* \* \* \*

6. In section 87.187 existing paragraphs (m) through (z) are redesignated (n) through (AA) and a new paragraph (m) is added to read as follows:

**§ 87.187 Frequencies.**

\* \* \* \*

(m) The frequency 406.025 MHz is an emergency and distress frequency available for use by emergency locator transmitters. Use of this frequency must be limited to transmissions of distress and safety communications.

\* \* \* \*

7. In Section 87.195 paragraph (a) is amended by adding a new sentence to read as follows:

**§ 87.195 Frequencies.**

(a) \* \* \* ELTs that transmit on the frequency 406.025 MHz use G1D emission.  
\* \* \* \* \*

8. A new Section 87.199 is added to read as follows:

**§ 87.199 Special requirements for 406.025 MHz ELTs.**

(a) 406.025 MHz ELTs must meet all the technical and performance standards contained in the Radio Technical Commission for Aeronautics document titled "Minimum Operational Performance Standards 406 MHz Emergency Locator Transmitters (ELT)" Document No. RTCA/DO-204 dated September 29, 1989. This RTCA document is incorporated by reference in accordance with 5 U.S.C. 552(a). The document is available for inspection at Commission headquarters in Washington, D.C. or may be obtained from the Department of Transportation, Federal Aviation Administration, Office of Airworthiness, 800 Independence Avenue SW, Washington, D.C. 20591.

(b) An identification code, issued by the National Oceanic and Atmospheric Administration (NOAA), the United States Program Manager for the 406.025 MHz COSPAS/SARSAT satellite system, must be programmed in each ELT unit to establish a unique identification for each ELT station. With each marketable ELT unit the manufacturer or grantee must include a postage pre-paid registration card addressed to: NOAA/SARSAT Operations Division, E/SP3, Federal Building 4, Washington, D.C. 20233. The registration card must include the ELT identification code and must request the owner's name, address, telephone number and type of aircraft.

(c) In addition to the identification plate or label requirements contained in §§ 2.925, 2.926 and 2.1003 of the Commission Rules, each 406.025 MHz ELT must be provided on the outside with a clearly discernable permanent plate or label containing the following statement: "It is extremely important that the owner of this 406.025 MHz ELT register the NOAA identification code contained on this label with the National Oceanic and Atmospheric Administration (NOAA) whose address is: NOAA, NOAA/SARSAT Operations Division, E/SP3, Federal Building 4, Washington, D.C. 20233."

(d) For 406.025 MHz ELTs whose identification code can be changed after manufacture, the identification code shown on the plate or label must be easily replaceable using commonly available tools.